

1 1. A modular vault comprising:
2 a plurality of side, end, and roof panels adapted to
3 be connected together to define a walk-in
4 enclosure, each panel pre-cast from a durable
5 material, each panel having an inner surface and
6 defined peripheral edges;
7 a door frame molded in at least one of the side or end
8 panels;
9 a door hingedly attached to the door frame, the door
10 controlling access to the walk-in enclosure;
11 joint means located on the inner surfaces and
12 peripheral edges of the panels, the joint means
13 adapted to engage the abutting panels defining
14 the walk-in enclosure;
15 a plurality of metal plates attached to the inner
16 surfaces of the panels at a location proximate
17 the peripheral edges, the metal plates being
18 aligned with the peripheral edges; and
19 a plurality of metal connectors welded to the metal
20 plates, the metal connectors sealing the corners
21 of the abutting panels and thereby making the
22 walk-in enclosure substantially vapor-tight.

1 2. The modular vault as claimed in claim 1, further
2 including a floor slab.

1 3. The modular vault as claimed in claim 2, wherein the
2 floor is pre-cast from a durable material.

1 4. The modular vault as claimed in claim 1, wherein the
2 durable material is steel-reinforced concrete.

1 5. The modular vault as claimed in claim 1, wherein the
2 durable material is fire-resistant for a specified time.

1 6. The modular vault as claimed in claim 1, wherein the
2 door is provided with bolts and locks.

1 7. The modular vault as claimed in claim 6, wherein the
2 door is fire-resistant for a specified time.

1 8. The modular vault as claimed in claim 1, wherein the
2 joint means are elongated grooves and outwardly extending
3 ridges in the inner surfaces and peripheral edges of the
4 panels, the ridges and grooves mating when the peripheral
5 edges and inner surfaces of the panels abut.

1 9. The modular vault as claimed in claim 8, wherein each
2 of the grooves is provided with a plurality of apertures which
3 may mate with a plurality of metal rods protruding from the
4 ridges.

1 10. A modular vault comprising:

2 a plurality of side panels pre-cast from steel-
3 reinforced concrete, each side panel having top,
4 side, and bottom edges, the top and side edges
5 having outwardly extending ridges;

6 a plurality of end panels pre-cast from steel-
7 reinforced concrete, each end panel having top,
8 side, and bottom edges and an inner surface, the
9 top edge having an outwardly extending ridge, the
10 inner surface provided with a plurality of
11 elongated grooves arranged parallel to the side
12 edges, the elongated grooves mating with the
13 ridges on the side edges of the side panels;

14 a roof panel pre-cast from steel-reinforced concrete,
15 the roof panel having defined peripheral edges
16 and an inner surface, a plurality of elongated
17 grooves arranged parallel to the peripheral
18 edges, the elongated grooves mating with the
19 ridges on the top edges of the side and end
20 panels;

21 an enclosure formed between the mating side, end, and
22 roof panels;

23 a door frame fixedly mounted in one of the end panels;

24 a vault door hingedly attached to the door frame, the
25 vault door adapted to control access to the
26 enclosure;

27 a plurality of metal plates embedded in the side, end,
28 and roof panels, the metal plates aligned with
29 and arranged proximate to the edges of the
30 panels;

31 a plurality of metal connectors weldedly connected to
32 the metal plates, the metal connectors arranged
33 to seal seams formed between the abutting panels;

34 and
35 means for securely holding the abutting panels
36 together.

1 11. The modular vault as claimed in claim 10, further
2 including a floor panel.

1 12. The modular vault as claimed in claim 10, wherein the
2 means for securely holding the abutting panels includes a
3 plurality of metal rods, the metal rods arranged to penetrate
4 the seams formed between the abutting panels.

1 13. A method of constructing a modular vault at a
2 construction site, comprising the steps of:

3 placing pre-cast end panels on a footing to form a
4 vertical front wall and a vertical rear wall;
5 placing pre-cast side panels on the footing to form
6 vertical side walls;
7 connecting the vertical side walls to the front wall
8 and the rear wall to form an interlocking walk-in
9 space;
10 welding the seams formed between abutting walls and
11 between walls and the footing;
12 placing a roof slab on top of the connected walls;
13 welding the seams formed between the connected walls
14 and the roof slab;
15 welding metal washers to metal rods protruding from
16 the seams formed between the walls and the roof
17 slab; and
18 covering the metal washers and metal rods with grouts.

1 14. The method as claimed in claim 13, further comprising
2 the step of pouring concrete on the exposed footing in the
3 walk-in space.

1 15. The method as claimed in claim 13, further comprising
2 the step of lowering a floor slab on the exposed footing in
3 the walk-in space before placing the roof slab on top of the
4 connected walls.

1 16. The method as claimed in claim 13, wherein the welding
2 step includes welding a metal connector to metal plates
3 embedded in the walls.

1 17. A modular vault comprising:
2 a unitary, housing body made of a durable material,
3 the housing body defining a substantially vapor-
4 tight enclosure;
5 a frame ¹⁰⁰ fixedly mounted to a side of the housing body;
6 a door ¹⁰⁸ hingedly attached to the frame, the door
7 providing access to the enclosure; and
8 means for facilitating hoisting of the housing body.

1 18. The modular vault as claimed in claim 17, wherein the
2 housing body comprises a pre-cast roof slab and a plurality of
3 pre-cast side walls.

1 19. The modular vault as claimed in claim 18, wherein the
2 housing body further comprises a floor slab.

1 20. The modular vault of claim 17, wherein the durable
2 material is steel-reinforced concrete.

1 21. The modular vault of claim 17, wherein the door is
2 fire-resistant for a specified time and provided with bolts
3 and locks.

1 22. The modular vault of claim 17, wherein the means for
2 facilitating hoisting is a plurality of hooks integrally
3 formed with the housing body.

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